

**MINUTES
of the
THIRD MEETING
of the
RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE**

**September 25, 2015
Los Alamos**

The third meeting of the Radioactive and Hazardous Materials Committee (RHMC) was called to order by Representative Cathrynn N. Brown, chair, on Friday, September 25, 2015, at 10:00 a.m. at the Fuller Lodge in Los Alamos.

Present

Rep. Cathrynn N. Brown, Chair
Rep. Eliseo Lee Alcon
Sen. Ted Barela
Sen. Carlos R. Cisneros
Rep. Stephanie Garcia Richard
Rep. Larry R. Scott
Rep. James G. Townsend

Absent

Sen. Daniel A. Ivey-Soto, Vice Chair
Sen. Gay G. Kernan
Sen. Carroll H. Leavell
Sen. Richard C. Martinez
Rep. G. Andres Romero

Advisory Members

Rep. Rod Montoya
Rep. Nick L. Salazar
Rep. Jim R. Trujillo

Sen. William F. Burt
Rep. David M. Gallegos
Sen. Ron Griggs
Sen. Stuart Ingle
Sen. William H. Payne
Sen. John Pinto
Sen. Nancy Rodriguez
Sen. Clemente Sanchez

Guest Legislator

Rep. Patricia A. Lundstrom

Staff

Gordon Meeks, Drafter, Legislative Council Service (LCS)
Renée Gregorio, Researcher II, LCS

Guests

The guest list is in the meeting file.

Handouts

Handouts and other written testimony are in the meeting file.

Friday, September 25

After Representative Brown welcomed audience members, she asked committee members to introduce themselves, then she introduced the LCS staff. Representative Garcia Richard announced that several groups that partner with the legislature were in attendance, and she asked the RHMC to welcome them.

National Nuclear Security Administration (NNSA)/U.S. Department of Energy (DOE) Updates

Kim Davis Lebak, manager of the Los Alamos Field Office, and Doug Hintze, newly appointed manager of the Office of Environmental Management (EM), both of the DOE's NNSA, each presented updates to the RHMC. As Ms. Lebak remarked, she and Mr. Hintze were colleagues before, when they both worked at the Savannah River site.

Ms. Lebak began by highlighting the DOE's organizational chart. She specified that she works for the NNSA, which is a semi-autonomous part of the DOE; Mr. Hintze works for the EM; and Charles McMillan, who was on the agenda at the end of the day, is the director of Los Alamos National Laboratory (LANL). Ms. Lebak works for Frank G. Klotz, administrator, NNSA. She indicated that all of the field offices for the NNSA are listed on the handout. She said that the strategic vision of the NNSA is on its web site; highlights of its mission include providing a safe, secure and effective deterrent to the nuclear stockpile, nonproliferation and counterterrorism support. She also spoke of the many aging DOE sites and how each is facing infrastructure and security issues due to age.

The DOE has a \$2 billion management and operating contract with Los Alamos National Security (LANL). She said that this involves having 10,000 employees and around 2,000 support service contracts. She added that the NNSA's budget is about 80% of the \$2 billion. Ms. Lebak spoke of the EM's budget and said that its portfolio is being separated out. She indicated that Congress is deliberating on the budget for 2016. She reviewed the outlook for the federal budget, saying that the DOE is one of the smaller federal agencies, and it marked the fiscal year (FY) 2016 budget request from the NNSA at \$12.6 billion. Of that, LANL's request for FY 2016 is just under \$2 billion and is \$75 million over the FY 2015 appropriation.

Mr. Lebak reviewed the nuclear facilities on site at LANL, which is the NNSA's oldest and second-largest site. Several of these sites are not in operation since the Waste Isolation Pilot Plant (WIPP) radiological event, and several others are in various stages of operation. She said that a priority had been placed on making shipments from LANL to WIPP, and about 93% of shipments were completed before the event there. She reviewed the history of that event briefly and said that LANL has complied with the Department of Environment (NMED) compliance order; that the accident investigation board issued its report in April of this year; and since that time, LANL has been investigating whether any of the same conditions that caused the breach to occur exist in any of its other waste streams. More testing is being done, although at this point, some of the same conditions have been found to exist in some of the waste streams. Current

construction projects include the radioactive and liquid waste treatment facility and the transuranic (TRU) waste facility. The NNSA is funding over \$100 million in upgrades at various facilities, she added.

She ended by speaking about federal legislation that became law at the end of 2014 and established the Manhattan Project National Historical Park, which showcases facilities that formed the backdrop for that project and includes 17 properties at LANL.

Mr. Hintze announced that he has been in New Mexico for seven days and in his position as field manager for four days, although he has been at the DOE since 1992. He said that the EM has been in operation for six months and was established as a result of the incident at WIPP. He gave the oversight responsibilities of each field office, with the NNSA field office having oversight for legacy cleanup and the EM for safety reviews and approvals. He spoke of the bridge contract recently signed with LANS to implement legacy cleanup with increased management and control. The budget request for FY 2016 is \$188.6 million; he added that this would include protection of surface water and ground water; actions to address the chromium plume; safe management of TRU waste and treatment; and soil and water remediation.

Mr. Hintze gave details about this year's efforts to manage nitrate salts by following the NMED's isolation plan and includes isolating drums under temperature control and determining waste treatment for the future to stabilize the drums. He added that safety is the DOE's first priority, and transparency is crucial. In his organization, hiring is occurring, with the goal of having 65 employees over the next year. He concluded by stating that the EM's plans include accomplishing its mission by defining its scope as it transitions away from the NNSA and into its own office. Project management is also crucial, he added, with plans always based on good science and safety evaluations.

Committee members' questions and subsequent discussion included the following points:

- what the bridge contract might mean for subcontractors, including that subcontracting plans would carry over, with the EM overseeing the scope and more oversight on the federal side;
- concern about the active groups of northern New Mexico having a seat at the table when priorities for cleanup are determined;
- the need for a new consent order and the fact that the DOE indicated in 2012 that it would not meet the current one; the NNSA remains primary on the permit, although discussions on what entity will be the new signatory, the NNSA or EM, are ongoing;
- the FY 2015 budget, which included work on a large TRU program, corrective action plans, revising programs for TRU waste, a compliance program for ground water and stormwater monitoring and cleanup and restoration of several sites;
- the shipment and monitoring of drums with TRU waste shipped to the Waste Control Specialists site in Texas;

- the NNSA's hope for continued federal funding and the fact that it does have some carryover funds to keep in operation;
- a need to look at the uniqueness of New Mexico's laboratories and how to build their missions and create jobs for New Mexicans;
- the impact of slowdowns on nuclear facilities and the fact that their budgets are up 10%; and
- LANL's inspection of different waste streams, its estimation of questionable drums and its subsequent reports to the NMED alongside LANL's commitment to manage a percentage of these drums until it gets testing results.

Chromium Contamination Status Report

David Rhodes, federal project director, EM, Los Alamos Field Office, DOE, began by informing the RHMC of his background and said that he has been in New Mexico for six years. He gave details of the hexavalent chromium plume that was found in the regional aquifer underneath Mortandad and Sandia canyons, stating the plume's size and shape and indicating that the plume's edge is about one-half mile from the nearest drinking water well. He said that the goal of the EM is to prevent migration of the plume, while a means of removing it from the aquifer is assessed.

The plume was discovered in 2005, and scientific characterizations have been conducted since that time, he added. Mr. Rhodes discussed the directionality of the plume, which flows southerly from Sandia Canyon and originated due to water being flushed out of a power plant's cooling towers from the mid-1950s to 1972. This water, which contained chromium, flowed down the canyon as surface water, penetrated rock layers and then the aquifer, he said, but 90% of the chromium that was released has returned to the wetland areas.

Among the project's features are the placement of wells around the plume to monitor ground water and pumping to determine if the migration could be controlled hydraulically. Mr. Rhodes said that an environmental assessment has to be completed at this point before more monitoring is done. There is a 30-day comment period in effect starting September 23 and a meeting on September 30, he informed the RHMC.

Because the plume borders the Pueblo of San Ildefonso, there is a need for immediate action, Mr. Rhodes stated, to control the plume's migration and to address the increased amount of chromium at the LANL boundary. He discussed various interim measures that the EM will be taking, which include pumping, installing another extraction well and injection wells and taking treated water and applying it to the land or returning it to the aquifer with the use of injection wells. He also spoke of the need to horizontally drill the monitoring wells because of the sensitive areas they are in, something that has not been done in New Mexico before for monitoring.

Committee members' questions and subsequent discussion included the following points:

- what is involved in water treatment and how it is sprayed on land or used to control dust on roads;
- the extraction of chromium as a treatment or chemically reducing the amount of chromium to a less toxic level;
- the location of segments of land on the Pueblo of San Ildefonso that are to be protected on the western side of the Rio Grande, where there is no pueblo human environment; and
- the substantial investment required for wells that cost \$3.5 million each, with a budget at \$33 million for 2015 and at \$28 million this year.

While committee members gathered around a working lunch, the chair introduced several visiting groups in the audience. Robert Chavez, youth coordinator for the Communities for Clean Water Youth Council, addressed the RHMC. He spoke of the mix of cultures in the organization, the need for youth to be educated about issues so that they can be included in decision-making and the need to protect all that is important — family, water, air and culture — as the laboratory does its work in northern New Mexico. He thanked the legislators for their work in communities and offered his respect.

Next, the RHMC entertained a motion and a second and unanimously approved the minutes from the meeting on August 17.

Laboratory Nuclear Energy Research

D.V. Rao, director of civilian nuclear programs at LANL, gave some background on his experience, which includes a Ph.D. in nuclear engineering and teaching experience at the University of New Mexico (UNM), as well as serving in management positions at LANL. Dr. Rao spoke enthusiastically about the nuclear weapons programs at the laboratory and how LANL works closely with other national laboratories in research and development efforts. He went on to speak about the variety of work engagements, including: the development of small nuclear power sources for spacecraft; work across the entire nuclear fuel cycle, such as accident-tolerant fuels, multiphysics modeling and computer simulations of nuclear reactors; building small nuclear reactors; and the potential role New Mexico's communities could have in used-fuel disposition through partnering with LANL. He spoke of the partnerships LANL has formed as part of the consortium for advanced simulation of light water reactors, and he delineated LANL's role in development and delivery of these systems. Dr. Rao said that LANL is working closely with the DOE and Westinghouse to bring advanced and accident-tolerant fuels to the industry. He also spoke about considering what is best for New Mexico's economy when looking at small modular reactor (SMR) production in the state, specifically, how it could help the economy for New Mexico to get involved in fabrication.

Committee members' questions and subsequent discussion included the following points:

- engaging in light manufacturing of small nuclear reactors in New Mexico to build the state's manufacturing base and economy;
- studies that compare natural gas installation with small SMRs;
- safe utilization of SMRs with current technology, the main driver being how well these can be fabricated and what the capital costs would be;
- questions about pricing of nuclear power versus coal or natural gas, to which Dr. Rao responded that he could share study results on this issue;
- LANL's work with the UNM Nuclear Engineering Department, the stiff competition for partnerships and the process for choosing partners;
- LANL's separate organization within the laboratory and a pilot program set up to appoint high-caliber staff from universities to work with the laboratory and vice versa;
- issues around costs of construction and licensing as well as concern regarding the use of LANL's designs by other countries;
- concern over the failure to clean up old mining sites and nuclear facilities across the nation;
- the emissions impact of nuclear energy compared to other technologies (on a scale of one to 10, coal would be at 10, nuclear at about .5);
- online availability of the state's energy plan through the Energy, Minerals and Natural Resources Department's and governor's web pages; and
- the presence in the state of people with the intellectual assets and skill sets needed to succeed at SMR production.

Animas River Contamination Status Report

Ryan C. Flynn, secretary of environment, and Dennis McQuillan, chief scientist, NMED, updated the RHMC on the toxic spill in the Animas River. They showed dramatic footage of the north fork of Cement Creek, where the blowout occurred on August 5. Secretary Flynn explained that acid rock drainage occurs in abandoned mines and leaches into creeks as it did there, and then the U.S. Environmental Protection Agency (EPA) installed bulkheads to stop the drainage, which caused the water table to rise 1,000 feet. The EPA was replacing bulkheads when the blowout occurred, he added, which released highly toxic wastewater from the Gold King Mine site. He said that the immediate issue is, of course, the toxic water, but that the ongoing long-term issue is the sediment that builds up over time. Governor Susana Martinez and Secretary Ryan took immediate action, he said, and he was at the site within 18 hours of being notified and stayed there for nine days.

Secretary Flynn reported that state agencies and local communities worked together well in this emergency situation. One day after being notified of the spill, he authorized \$500,000 in emergency expenditures, and by August 10, the NMED had 25 staff members on site. (See the time line in the handout for additional specific actions taken.)

Secretary Flynn added that the NMED contacted all downstream users immediately, as well as seven public water systems that draw from the Animas River. NMED staff was on the ground working with community members to close irrigation ditches and to ensure that there were backups in place for livestock, he added. Although the plume entered New Mexico on August 8, the EPA did not elevate the event to a regional emergency until August 9, he informed the RHMC, adding that the NMED and the EPA have a "major difference in approach".

When the plume arrived, there were high levels of turbidity in the river, and on August 12 and 13, there were spikes due to stormwater, he reported, which is part of the long-term issue at hand. He spoke of the sediment that contains high levels of metals settling on the bottom of the river, which are disturbed and dislodged when there is a storm event. He added that higher levels have settled up north in Colorado, and as the spring thaw comes and the water melts, this will need to be monitored.

Secretary Flynn mentioned that scientists at the NMED were offended by the EPA graph of the amount of dissolved metals in the surface water; nothing in the graph shows arsenic levels, and the graph gives the impression that lead concentrations are low or at zero. He then spoke of the ways in which the NMED worked with the public water systems and how his staff set up a mobile lab for testing domestic wells. He reported that there is no evidence that private wells were affected. The NMED also worked to provide backup supplies of water for farmers. Secretary Flynn reviewed actions taken by the NMED and suggested that legislators and the public could make their own conclusions by reviewing the extensive data on the NMED's web site: <https://www.env.nm.gov/riverwatersafety/>.

Mr. McQuillan spoke next on the NMED's long-term monitoring plan, which involves gathering data; making risk assessments; looking at background issues around the effects of spills; the blowout; and natural acid rock drainage over time. Mr. McQuillan pointed out that this recent spill was not the first, and in the 1970s, a spill occurred that killed the fish, although this one did not. He gave details on the existence of heavy metals in the watershed over time and said that with mining, there is more opportunity for oxidation.

New Mexico has been cleaning up its mines since the early 1980s, Mr. McQuillan said, with priority given to cleaning up the worst ones first. He cited the Terrero Mine cleanup as a success, along with El Molino mill and corresponding channels. He gave further details on other mines being remediated. Secretary Ryan spoke up to say that the NMED can successfully remediate mining issues, and the state does have a problem with abandoned mines in the state, which are public health risks. The debate, he added, is at the federal level and centers around who will pay for these cleanups — taxpayers or the industry. He added that New Mexico has 15,000 abandoned mine sites and that policymakers have to decide how these will be cleaned up.

Committee members' questions and subsequent discussion included the following points:

- the New Mexico congressional delegation's stance with the Martinez Administration on EPA reimbursement to the state and local communities, with assurance that the state receive compensation for cleanup going forward;
- the NMED's primary concern of the cleanup of abandoned mines;
- current stringent state requirements for new mining companies;
- dealing with suspended contaminants;
- how the City of Farmington will install a shut-down system in case of a storm event, although the EPA needs to step up and support this;
- the need for a locally driven monitoring effort; the efforts thus far have included the Navajo Nation, the State of Utah, public universities and local communities;
- full damage assessment would include the impact of the spill on the local farm economy;
- the EPA's ultimate responsibility for the spill and cleanup;
- cleanup as a long-term commitment that needs a long-term funding source and the suggestion that the RHMC look at this issue;
- Representative Brown's request to have a review of the 2008 legislation on November's agenda;
- coring work strongly suggests the presence of heavy metals before the Gold King Mine spill, and the NMED has data from before and after the spill;
- the NMED's mapping of New Mexico's waterways to develop baselines for water quality;
- ongoing danger in the area of the Gold King Mine because of other abandoned mine sites;
- the need to fully understand the nature of the contamination before resolving it; and
- New Mexico's technical know-how in dealing with its river systems and the need for funding with which to do that.

LANL Overview

Charles McMillan, director of LANL, began by speaking of LANL's goals, stating its mission of solving national security challenges through excellence in science. He highlighted the goal of "attracting, inspiring and developing world-class talent to ensure a vital future work force", with the intention of hiring 1,500 workers over the next five years. He stressed that the laboratory is known for ensuring an effective nuclear deterrent and the health of the nation's nuclear stockpile. LANL is very engaged in reducing threats to national security and has been supportive of national negotiations.

Mr. McMillan described LANL's science pillars as the four areas in which the laboratory is investing technically. He spoke of the ways in which LANL's expertise addresses environmental challenges such as climate change. He then spoke about LANL's handling of nuclear waste and that it has developed a path forward for storage and treatment through working with the state.

He said that LANL's budget is \$2.1 billion (see handout for a breakdown by program). He then delineated the current work force by discipline, education, gender and geography. Mr. McMillan stressed LANL's dependence on New Mexico's education system for its future work force. He reviewed the economic impact of LANL on New Mexico's small businesses, stating that LANL has spent \$300 million in the state through the month of August in procurement. He added that the venture acceleration funds assist regional businesses, that LANL provides technical assistance to small businesses in the state and that LANL is both a beneficiary of education in the state and contributes back to teachers and students through its programming and resources, especially providing science, technology, engineering and mathematics (STEM) opportunities for students and ongoing teacher education in the sciences.

Committee members' questions and subsequent discussion included the following points:

- concern over whether LANL is engaged in recruitment of students at the secondary level;
- LANL's programs for college students and also elementary level students, its STEM education programs, its math and science academy and supercomputing challenges;
- LANL's employee scholarship fund, which ensures funding for at least 20 students to find a place at the laboratory; and
- how the laboratory could get more involved in internet superhighway expansion into rural areas.

Adjournment

There being no further business, the committee adjourned at 4:18 p.m.